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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/696,442 | 10/28/2003 | Andrew James Dallas | 758.1046USC2 | 6769 |

7590 10/31/2005

Attention: Mara E. Liepa
MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, MN 55402-0903

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| EXAMINER |
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LAWRENCE JR, FRANK M

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| ART UNIT | PAPER NUMBER |
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1724

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,442

Applicant(s)

DALLAS ET AL.

Examiner

Frank M. Lawrence

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 9, 10 and 12-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-16 and 26 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 9, 10 and 18-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 7, 2005 has been entered.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-5, 7, 9, 17-20 and 25 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 5-8, 12, 14, 15, 17 and 21 of U.S. Patent No. 6,638,339 in view of Kinkead (5,626,820). The instant claims differ from the patented claims in that there is a second different activated carbon adsorbent material and that the particulate filter is cylindrical. Kinkead '820 discloses an air filtering system having

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different varieties of impregnated activated carbon held together with polyester fibers (figures 1A-1C, 3, 7, col. 4, lines 55-62, col. 5, lines 15-26, col. 6, lines 8-18, col. 10, lines 10-30, claims 11-19). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the activated carbon filter of the instant claims by including a second variety of activated carbon in order to provide a means for more effectively removing different types of gaseous contaminants. It also would have been obvious to one skilled in the art to use any suitable shape for the particulate filter based on the application. For example, a cylindrical filter may be used where a larger surface area with a low pressure drop is desired. Also, one skilled in the art would understand that the portions of the instant claims that are recited in the patented claims are capable of functioning without a housing.

3. Claims 1-5, 7, 9 and 17-25 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 6, 10, 11, 13 and 14 of U.S. Patent No. 6,432,177 in view of Kinhead '820. The instant claims differ from the patented claims for the same reasons discussed in paragraph 2 above, and would have been obvious to modify for the reasons also given above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 7, 9, 17- 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '177 in view of Kinhead '820.

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6. JP '177 discloses a fuel cell system, comprising a fuel cell (2) having an oxidant inlet, a filter assembly having an inlet side for receiving dirty oxidant gas, a filter element (20) including a solid, rounded activated carbon filter and electret filters for removing dust and poisoning substances from the oxidant gas, and an outlet side connected to the oxidant inlet of the fuel cell (see figures, abstract). The activated carbon filter is inherently capable of removing substances such as those listed in instant claim 9 and is also capable of permanently retaining contaminants as well as releasably capturing contaminants if a temperature or pressure differential were applied. The instant claims differ from the disclosure of JP '177 in that the activated carbon includes granules held together by a polymeric material and is impregnated with an acid or base, and that there is a second activated carbon or different adsorbent and a HEPA filter in addition to the first adsorbent.

7. Kinkead '820 discloses an air filtering system including an inlet for receiving a dirty gas stream, an outlet that is capable of being connected to any device requiring cleaned air, a particulate HEPA filter (24), and chemical filters that can include activated carbon particles that are impregnated with an acidic or basic substance for removing basic or acidic contaminants, respectively, and held together with polyester fibers (figures 1A-1C, 3, 7, col. 4, lines 55-62, col. 5, lines 15-26, col. 6, lines 8-18, col. 10, lines 10-29, claims 11-19). In an example, a first layer of activated carbon impregnated with acid and a second layer of activated carbon impregnated with a base can be used upstream of a HEPA filter (figures 1c, 7, col. 10, lines 20-24). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the activated carbon filter of the instant claims by including a second variety of impregnated activated carbon and a HEPA filter in order to provide a means for more effectively removing

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different types of gaseous and particulate contaminants (see Kinkead et al. col. 9, line 65 to col. 10, line 24, claims 11-19), and to use a means for supporting the activated carbon so that it can be exposed to a contaminated gas stream while avoiding the need for handling loose particulate carbon. It also would have been obvious to one skilled in the art to use any suitable shape for the particulate filter based on the application. For example, a cylindrical filter may be used where a larger surface area with a low pressure drop is desired.

8. Claims 4, 5 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '177 in view of Kinkead et al. '820 as applied to claims 1 and 20 above, and further in view of Berger et al. '715.

9. JP '177 in view of Kinkead et al. '820 discloses all of the limitations of the claims except that the activated carbon is granulated or is curved and extruded. Berger et al. '715 disclose an activated carbon filter for removing contaminants from a gas stream, comprising granulated activated carbon that is mixed with a binder and extruded into a cylindrical shape (figures, col. 5, lines 39-57, col. 6, lines 49-67). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the activated carbon filter of the primary references by using a curved, extruded granular activated carbon in order to provide a filter that can be employed with wider pressure drop limits, more diversified filtration properties, and increased ability to retain solids (col. 2, lines 16-38).

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP '177 in view of Kinkead et al. '820 as applied to claim 1 above, and further in view of Nakanishi et al. '642.

11. JP '177 in view of Kinkead et al. '820 discloses all of the limitations of the claims except that the filter system comprises a hydrophobic layer. Nakanishi et al. '642 disclose a fuel cell

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system, comprising a fuel cell (21) having an oxidant inlet, a filter assembly including a dust filter (25) with an inlet for receiving dirty oxidant gas, solid zeolite molecular sieve filter beds (27) for removing gases other than oxygen and argon from air, a hydrophobic layer in a water separator (34) and an outlet for supplying cleaned oxidant to the fuel cell (col. 2, lines 48-55, col. 3, lines 7-57, figures 1-2). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of the primary references by incorporating a hydrophobic layer in order to provide a means for capturing moisture from the gas stream that could negatively affect the adsorption capacity of the adsorption layer or the performance of the fuel cell.

Allowable Subject Matter

12. Claims 12-16 and 26 are allowed.

13. The following is an examiner's statement of reasons for allowance: The combination of cited prior art references fail to disclose the filter assembly with a fuel cell, wherein the cylindrical particulate filter includes cellulose material and fine fiber, in combination with the other recited features.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

14. Applicant's arguments filed September 7, 2005 have been fully considered but they are not persuasive. Applicant argues that none of the cited prior art discloses a second adsorbent layer, however Kinkead et al. discloses the use of different layers of different types of impregnated activated carbons for removing different contaminant types (128 and 130 in the epitaxy station example). The amendment to claim 12 distinguishes it over the cited prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frank M. Lawrence
Primary Examiner
Art Unit 1724

Frank Lawrence
10-27-05